REMARKS

Applicants herein cancel claim 7 without prejudice and/or disclaimer.

Applicants herein amend claims 1-6, so that they are identical to claims 1-6 of the parent application Serial No. 09/090,921, prior to the filing of the Amendment Under 37 C.F.R. § 1.116 dated October 1, 2001.

Applicants herein add new claims 8-21, which are identical to claims 8-21 of the parent application Serial No. 09/090,921, prior to the filing of the Amendment Under 37 C.F.R. § 1.116 dated October 1, 2001.

Applicants believe that claims 1-6 and 8-21 are allowable for at least the reasons set forth in the Amendment Under 37 C.F.R. § 1.111 dated February 16, 2001 in the parent application Serial No. 09/090,921, which is hereby incorporated by reference.

Specifically, Muranaka et al. discloses, *inter alia*, a sealed rolling bearing into which a grease is sealed. Nothing in Muranaka et al. recites: (a) the use of a sole lubricant consisting of a lubricating oil (or a sole lubricant comprising a lubricating oil, wherein the kinematic viscosity of the sole lubricant is not more than $400mm^2/s$) instead of grease; and (b) the direct injection of the lubricating oil into a to-be-sealed bearing space as defined by a set of sealing members. One skilled in the art understands that grease (a thick, lubricating substance derived from petroleum having a kinematic viscosity higher than $400mm^2/s$) is distinct from lubricating oil (a liquid lubricating substance having a kinematic viscosity less than $400mm^2/s$). In addition, grease differs from a lubricating oil in that, e.g., grease includes thickening agents as shown in Table 2 of Muranaka et al.

Further, the bearing taught by Muranaka et al. is not suitable for use in a hard disk drive, since the lubricant mass of the grease is likely to be scraped out from the contact face of the bearing, which, in turn, likely causes insufficient lubrication locally (*See*, e.g., page 3, lines 1-5 of the present application).

With respect to the secondary reference, Johnstone et al. disclose, *inter alia*, continuously supplying lubrication oil to a bearing using an atomizer 26, which is positioned outside the bearing (*See* Fig. 1 of Johnstone et al.). Johnstone et al. disclose a steady lubricating system wherein the lubricant is continuously applied from the outside of the bearing on the exposed portion of the bearing, and is not directly injected into a to-be-sealed bearing space as recited in the instant claims. Moreover, Johnstone et al. do not teach or suggest that the predetermined adequate amount of the lubricant oil used is in a range of 1 to 50% by volume of the bearing space defined by a set of sealing members (See claims 1, 9 and 10). The ratio disclosed in Johnstone et al. is of the amount of oil to air, not lubricating oil to bearing space volume. Instead, Johnstone et al. disclose controlling the volume of oil in an oil-air lubricating mixture sprayed on the outside of a bearing. (*See* col. 3, line 30 to col. 4, line 3 of Johnstone et al.). Unlike the claimed invention, the microcomputer 20 of Johnstone et al. controls the volume of oil in the oil-air mist based upon the bearing temperature, as shown in Fig. 2 of Johnstone et al. Johnstone et al. do not define any bearing volume that is used as a basis for determining a volume of lubricating oil that is confined within the to-be-sealed bearing volume. Since the bearing of Johnstone et al. is not sealed (as it would have to be in order to receive any of the oil-air mist from the atomizer), Johnstone et al. clearly lacks any teaching, inherent or

otherwise, of using a lubricating oil in a sealed bearing space defined by sealing elements, wherein the amount of lubricating oil used is determined by the volume of the bearing space.

Applicants herein add new claims 22-25, which are fully supported by the specification as originally filed. Applicants believe that new claims 22-25 are allowable at least the same reasons as claims 1-6 and 8-21.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 7 is canceled.

The claims are amended as follows:

1. (*Amended*) A rolling bearing for a hard disk drive comprising:

an inner ring;

an outer ring;

a plural number of rolling elements located between said inner ring and said outer ring;

a cage supporting said [a] plural number of rolling elements;

a pair of sealing members fixed to [the] both ends in an [the] axial direction of one of said inner ring and said outer ring and disposed opposite to each other; and

a sole lubricant consisting of lubricating oil directly injected into a to-be-sealed bearing space defined between said sealing members at the both ends in the axial direction, wherein the amount of the lubricating oil is in a range of 1 to 50% by volume of the to-be-sealed bearing space.

2. (*Amended*) The rolling bearing for a hard disk drive according to claim 1, in which the amount of said lubricating oil is not more than 30% by volume of the to-be-sealed bearing space.

3. (*Amended*) The rolling bearing for a hard disk drive according to claim 1, in which the amount of said lubricating oil is in a range of 4-25% by volume of the to-be-sealed bearing space.

4. (*Amended*) The rolling bearing for a hard disk drive according to claim 1, in which said [a] lubricating oil is preliminarily contained in said cage.

5. (*Amended*) The rolling bearing for a hard disk drive according to claim 4, in which an amount of said lubricating oil preliminary contained in said cage [case] is in a range of 0.1-80% by weight of said cage.

6. (*Amended*) The rolling bearing for a hard disk drive according to claim 5, in which the [an] amount of said lubricating oil preliminary contained in said cage [case] is in a range of 10-70% by weight of said cage.

Claims 8-25 are added as new claims.